

Kentucky, 5, 11, 17, 28. Maine, 25. Maryland, 10, 30. Massachusetts, 5, 6, 8, 9, 10, 24, 25. Michigan, 5, 6, 7, 29, 30. Minnesota, 3, 4, 6, 7, 8, 11, 12, 20. Missouri, 1, 13, 16, 18, 28, 29, 30. Nebraska, 1, 10, 11, 15, 30. Nevada, 27, 28. New Jersey, 5, 8, 9, 10, 24, 30. New York, 5, 8, 9, 10. North Carolina, 13. North Dakota, 3, 11, 19, 25. Ohio, 1, 5, 6, 7, 9 to 13, 16, 19, 25, 28, 29, 30. Oklahoma, 16. Oregon, 15, 21. Pennsylvania, 5, 7 to 10, 21, 30. Rhode Island, 6, 8. South Dakota, 7, 9, 10, 11, 14, 19. Tennessee, 16. Vermont, 5. Washington, 23, 25, 26, 28. West Virginia, 5. Wisconsin, 3, 4, 9, 12, 29.

WIND.

PREVAILING DIRECTIONS.

The prevailing winds for November, 1894, viz, those that were recorded most frequently at Weather Bureau stations, are shown in Tables I and VIII; they are not given on Chart II, as has hitherto been the custom, but the resultant winds are published instead.

RESULTANT WINDS.

The resultant winds for the current month, as deduced from the hourly readings of self-registers at about 67 regular Weather Bureau stations, are given in Table VIII. Other resultants, deduced from the personal observations made at 8 a. m. and 8 p. m., are given in Table IX. These latter resultants are also shown graphically on Chart II, in connection with the isobars based on the same system of simultaneous observation; the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represents one hour's duration of a wind of average velocity; these figures (or the ratio between them and the total number of observations in this month) indicate the extent to which winds from different directions counterbalanced each other. The original north, south, east, and west components are given in detail in Table IX.

During November the resultant movement was generally from the northwest in New England, west in the middle and south Atlantic States, southwest in the Ohio Valley and Tennessee and southern Rocky Mountain slope, northeast and southeast in the Gulf States, and southeast in the north Pacific coast region.

HIGH WINDS.

Maximum wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows (maximum velocities are averages for five minutes; extreme velocities are gusts of shorter duration, and are not given in this table):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Miles.				Miles.	
Amarillo, Tex.	12	56	n.	Helena, Mont.	21	50	sw.
Do.	15	58	nw.	Huron, S. Dak.	28	50	se.
Do.	16	52	n.	Lander, Wyo.	19	55	sw.
Bismarck, N. Dak.	20	54	nw.	Do.	20	50	sw.
Block Island, R. I.	5	78	e.	Nantucket, Mass.	6	60	ne.
Do.	5	68	e.	Pueblo, Colo.	15	52	n.
Buffalo, N. Y.	3	59	sw.	Tatoosh Island, Wash.	8	50	e.
Fort Canby, Wash.	24	73	se.	Do.	24	58	e.
Do.	25	50	se.	Do.	26	57	e.
Cheyenne, Wyo.	19	56	w.	Williston, N. Dak.	8	50	nw.
Chicago, Ill.	19	60	sw.	Woods Holl, Mass.	3	60	n.
Cleveland, Ohio	20	51	w.	Do.	20	50	nw.
Denver, Colo.	24	60	ne.	Do.	20	50	nw.
Eastport, Me.	15	56	se.	Do.	28	52	nw.
Helena, Mont.	19	52	w.				

LOCAL STORMS.

Destructive or severe local storms were reported as follows:

1st.—Near Shreveport, La., thunderstorm.

3d.—Eastport, Me., windstorm. Buffalo, N. Y., windstorm; one life lost.

6th.—Boston, Mansfield, and Monson, Mass., New Haven, New London, Greenfield Hill, and Hartford, Conn., and Bristol, R. I., snowstorms.

15th.—Denver, Colo., windstorm; one person injured.

17th.—Southwesterly winds prevailed in the south Atlantic States and southeast in Florida with numerous local rains, while colder northwest winds prevailed over Alabama and the west Gulf States. Under these conditions Jacksonville reports that three waterspouts were reported over the St. Johns River, southwest of station, just before 1 p. m.; they extended from the water to the clouds and appeared as spiral clouds traveling on the surface of the water.

19th.—Lander, Wyo., windstorm.

23d.—Hollands Store and Morton, Miss., thunderstorms. Topton, Miss., windstorm.

24th.—Oswego, N. Y., windstorm.

25th.—Burkittsville, Md., windstorm.

WIND SIGNALS FOR NOVEMBER.

As mentioned in a previous section the storm wind signals and the cold wind signals can scarcely be separated from each other in the winter months, they are, therefore, transferred from the section on storms to the section on high winds, and are in detail as follows:

In connection with low No. II the following signals were ordered: 1st, 1.45 p. m., southwest signals, Galveston and Corpus Christi; information, New Orleans, and Port Eads. Noon, storm southwest, Buffalo; 10.40 p. m., southeast, Port Eads, New Orleans, Mobile, and Pensacola.

2d, 9.50 a. m., storm southeast, Lakes Michigan and Huron, Sault Ste. Marie and Marquette; information, Duluth, Ashland section, Houghton section, and Pepin; 10.45 a. m., storm southeast, Lake Erie, information, Lake Ontario; 1.45 p. m., southwest storm, Rochester, Oswego, and section; 4.00 p. m., signals changed to storm northwest, Lake Michigan and Marquette; 11.00 p. m., change to storm southwest, Lake Erie.

3d, 9.45 a. m., southwest, from Breakwater to Boston section, except Atlantic City; 11.00 a. m., change to northwest, from Detroit to Oswego; 11.00 a. m., southwest, Portland and Eastport.

In connection with low area No. VI the following signals were ordered: 5th, 10.20 a. m., storm northeast, Newport section, Narragansett section, Woods Holl, and Boston section; storm northwest, Delaware Breakwater to New London; information, Portland and Eastport, Baltimore, and Norfolk, and section; 10.00 a. m., information at Duluth and Ashland section and on Lake Michigan, except at Frankfort section; storm northwest, Lake Huron, Sault Ste. Marie and section, Marquette and section, Frankfort section; 11.00 a. m., information, Lakes Erie and Ontario; 12.20 p. m., hoist northwest, Detroit to Oswego and section; 12.00 m., northwest signals at Punta Gorda, Key West, and Jupiter; 12.50 p. m., northwest signals from Wilmington to Baltimore; 1.10 p. m., northeast signals, Portland and Eastport; 9.15 p. m., change northeast to northwest, Newport section to Boston section; 6th, 1.10 p. m., northeast signals changed to northwest, Portland to Eastport.

In connection with low area No. VII the following signals were ordered: 7th, 1.40 p. m., information signals, Detroit to Oswego; 10.00 a. m., southwest, Buffalo. 8th, 11.20 a. m., information from Breakwater to Woods Holl section; 10.35 p. m., northeast, Narragansett section, and Woods Holl section.

In connection with low area No. VIII the following signals

were ordered: 9th, 11.00 a. m., southeast, Lakes Erie and Ontario; 10.00 a. m., southeast, Huron, Sault Ste. Marie section, all others on Lakes Pepin, Superior, Michigan, and Huron northwest; 5.00 p. m., Sault Ste. Marie section and Huron changed to northwest; 10.45 p. m., continue northeast, Naragansett and Woods Holl section; 11.00 p. m., southeast, Breakwater to Newport section, Boston and section; 8.00 a. m., change to northwest, Sandusky, Cleveland, Buffalo, Oswego, and section; 11.00 p. m., northwest, Norfolk and section, Newport News, West Point, Baltimore. 10th, 10.10 a. m., storm northwest, Lake Michigan, Marquette section, Houghton section, continue; 10.00 a. m., continue, Duluth section, and Ashland section, change to information.

In connection with low area No. IX the following signals were ordered: 12th, 10.00 a. m., storm northwest, all stations on Lakes Superior, Michigan, Huron, and Pepin; 11.10 a. m., information from Erie to Oswego, from Detroit to Cleveland, southwest; 1.10 p. m., southwest signals from Erie to Oswego section; 5.15 p. m., changed to storm northwest, Lakes Pepin and Superior, except Sault Ste. Marie section, Mackinaw. 13th, 10.00 a. m., information, all stations on Lakes Superior, Michigan, Huron, and Pepin; 11.10 a. m., southwest continued. 14th, 9.00 a. m., changed to northwest, Buffalo.

In connection with low area No. X the following signals were ordered: 14th, 5.57 p. m., storm southeast, Marquette section, Sault Ste. Marie section, Green Bay, Escanaba, Manistee; information at all other stations on Lakes Superior, Huron, and Pepin; 7.00 p. m., signals changed to storm northwest, Pepin, Ashland section, Houghton section, Milwaukee section, Chicago, Grand Haven section, Frankfort section; 11.00 p. m., storm southwest, Lake Erie and Detroit; 10.00 p. m., storm southeast, Alpena and Port Huron; 11.00 p. m., Lakes Huron and Erie. 15th, 10.00 a. m., storm southwest, on Lake Ontario; 10.05 a. m., all stations on Lakes Superior, Michigan, Huron, and Pepin changed to storm southwest, except Duluth; 1.00 p. m., southwest signals, Breakwater to Boston section; information, Portland and Eastport, Norfolk section to Baltimore; 6.00 p. m., storm southwest at all stations on Lakes Superior, Michigan, Huron, and Pepin; 10.50 p. m., information from Corpus Christi to New Orleans.

In connection with low area No. Xa the following signals were ordered: 16th, 1.20 p. m., northwest signals, Galveston; information, Mobile and Pensacola; 10.15 p. m., northwest, Corpus Christi, Port Eads, New Orleans.

In connection with low area No. XI the following signals were ordered: 18th, 11.12 a. m., information, all stations on Lakes Superior, Michigan, Huron, and Pepin; 10.35 p. m., storm northwest, Erie; 10.00 p. m., signals changed to northwest, Alpena, Port Huron, Marquette, Green Bay,

Sault Ste. Marie. 19th, 10.50 a. m., northwest, Oswego and section.

In connection with low area No. XII the following signals were ordered: 19th, 5.50 p. m., storm southeast, Lakes Pepin, Superior, and Michigan; 10.50 a. m., southeast, Detroit to Buffalo. 20th, 11.10 a. m., southeast, Lake Ontario; 5.10 p. m., signals changed to storm northwest, Lakes Pepin, Superior, and Michigan, and on Huron at daylight 21st; 10.15 p. m., change to storm southwest, Toledo, Sandusky, Cleveland, Buffalo.

In connection with low areas No. XIII and XIIIa the following signals were ordered: 21st, 6.14 p. m., information, Lakes Pepin, Superior, and Michigan. 22d, 10.00 a. m., information, Lake Huron. 23d, 10.30 a. m., storm southwest, Cleveland, Erie, Buffalo, and Ontario; 1.40 p. m., information, Breakwater to New London and Boston to Eastport; southwest signals Newport section to Woods Holl section. 24th, 11.00 a. m., information, Ontario and Erie to Toledo; 9.00 a. m., storm southwest, Buffalo; 9.55 a. m., storm southwest, Detroit; 10.00 a. m., storm northwest, Huron, Sault Ste. Marie, Grand Haven, and Frankfort section; information, west shore of Lake Michigan and Marquette section; 9.45 p. m., storm northwest, Cleveland, Erie, Lake Ontario; 10.40 p. m., information, Breakwater to New London, Boston to Eastport; 10.45 p. m., storm southwest, Newport section, Naragansett section, Woods Holl section. 25th, 9.10 a. m., northwest signals, Breakwater to New London and Boston to Eastport; southwest changed to northwest, Newport section to Woods Holl section.

In connection with low area No. XIV the following signals were ordered: 26th, 10.19 a. m., information at Detroit, Toledo, Sandusky, Cleveland, Erie, Buffalo, Rochester, Oswego section, and Oswego; 9.44 a. m., information, Duluth section, storm northwest, Pepin, Ashland section, Houghton section, storm southeast, all other points; 12.00 m., southwest signals, Toledo to Oswego; 5.10 p. m., storm northwest, Duluth section, Marquette section, Sault Ste. Marie section, and Lakes Huron and Michigan; 10.40 p. m., change to northwest, Lakes Erie and Ontario; 10.30 p. m., southwest signals, Breakwater to Eastport. 27th, 5.00 p. m., northwest signals continue, Sault Ste. Marie and Huron; 10.40 p. m., continue northwest on Lakes Erie and Ontario. 28th, 12.00 m., northwest signals, Breakwater to Eastport.

In connection with low area No. XV the following signals were ordered: 28th, 6.12 p. m., storm southeast, Lakes Pepin, Michigan, and Superior, except northeast at Duluth; 5.30 p. m., information, Lake Huron. 29th, 4.00 p. m., northeast signal at Jupiter; 5.30 p. m., southeast storm, Houghton section, Marquette section, Sault Ste. Marie section, Manistee section, Frankfort, Escanaba, Green Bay section, Mackinaw section; elsewhere on Michigan and Huron, information.

ATMOSPHERIC ELECTRICITY.

GENERAL STATISTICS.

The table showing in detail for November, 1894, the statistics relative to auroras and thunderstorms is placed among the meteorological tables as No. XI, instead of being given in the text as heretofore. It shows the number of stations from which meteorologic reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month.

THUNDERSTORMS.

A mention of the more severe thunderstorms reported during the month is made under "Local storms." The dates on which reports of thunderstorms were most numerous were: 1st, 39; 2d, 20; 16th, 13; 23d, 49; 30th, 23.

The States where thunderstorm reports were most numerous were: Alabama, Arkansas, Florida, Missouri, South Carolina, Tennessee, and Texas.

The States where the dates of thunderstorms were most frequent were: Texas, where they were recorded on nine days; Louisiana, on eight days; Iowa, on six days; South Carolina, on five days.

DAMAGE BY LIGHTNING.

No reports of damage done by lightning during November have been received.

AURORAS.

The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four days preceding and following the date of full moon,